# CS 255 Business Requirements Document Template

Complete this template by replacing the bracketed text with the relevant information.

This template lays out all the different sections that you need to complete for Project One. Each section has guiding questions to prompt your thinking. These questions are meant to guide your initial responses to each area. You are encouraged to go beyond these questions using what you have learned in your readings. You will need to continually reference the interview transcript as you work to make sure that you are addressing your client’s needs. There is no required length for the final document. Instead, the goal is to complete each section based on your client’s needs.

**Tip:** You should respond in a bulleted list for each section. This will make your thoughts easier to reference when you move into the design phase for Project Two. One starter bullet has been provided for you in each section, but you will need to add more.

## System Components and Design

### Purpose

*What is the purpose of this project? Who is the client and what do they want their system to be able to do?*

* The DriverPass system's objective is to give students access to online practice tests and roadside instruction in order to better equip them for driving examinations. Additionally, the technology would give DriverPass a platform to oversee student registrations, monitor academic progress, and produce reports.

### System Background

*What does DriverPass want the system to do? What is the problem they want to fix? What are the different components needed for this system?*

* A new startup called DriverPass offers online practice tests and roadside instruction to students getting ready for their driving examinations. The business has determined that it needs a system to track student progress, administer mock examinations, and handle student data.

### Objectives and Goals

*What should this system be able to do when it is completed? What measurable tasks need to be included in the system design to achieve this?*

* Develop a system that is easy to use for students, instructors, and administrators.
* Improve coordination and communication between various departments and users.
* Make sure the interface is easy to use and requires little assistance or training.
* Make sure the system can develop and adapt to the organization's future expansion and changes.
* Offline access
* Develop a system that is secure and protects student data.
* Improve the quality of driver education and reduce the cost of driver education.

## Requirements

### Nonfunctional Requirements

*In this section, you will detail the different nonfunctional requirements for the DriverPass system. You will need to think about the different things that the system needs to function properly.*

#### Performance Requirements

*What environments (web-based, application, etc.) does this system need to run in? How fast should the system run? How often should the system be updated?*

* The DriverPass system should be designed to run in a web-based environment. This will allow users to access the system from anywhere with an internet connection, using a variety of devices, including computers, tablets, and smartphones. The system should be designed to have a fast response time. This means that users should not have to wait long for pages to load or for requests to be processed. The target response time for the system should be 200 milliseconds. However, the system should also be able to handle occasional spikes in traffic without significantly increasing response times. The response time threshold for the system should be 500 milliseconds. The system should be updated on a weekly basis, this will ensure that users always have access to the latest features and bug fixes.

*What platforms (Windows, Unix, etc.) should the system run on? Does the back end require any tools, such as a database, to support this application?*

* The DriverPass system should be platform-agnostic and run on various platforms, including Windows, Unix, and Linux environments, this ensures compatibility with a wide range of hardware and software configurations, allowing users to access the system regardless of their preferred platform. To support the application's functionality the back end of the system requires a robust database management system (DBMS) to store and manage user data, practice exam questions, and student progress tracking information. A relational database management system (RDBMS) like PostgreSQL or MySQL would be well-suited for this application due to their scalability, reliability, and support for structured data storage and retrieval.

#### Accuracy and Precision

*How will you distinguish between different users?* *Is the input case-sensitive? When should the system inform the admin of a problem?*

* The DriverPass system will utilize unique identifiers and case-insensitive input handling to distinguish between users and enhance accuracy. Admins will be notified of critical system issues, data corruption, suspicious user activity, and multiple failed logins attempts through a robust monitoring and alerting mechanism.

#### Adaptability

*Can you make changes to the user (add/remove/modify) without changing code? How will the system adapt to platform updates? What type of access does the IT admin need?*

* The DriverPass system will be adaptable to changes in user management, platform updates, and IT admin access requirements. User management will be handled through a database or configuration file which would allow administrators to make changes without altering the code. The system will be designed using platform-agnostic languages and libraries making it compatible with different operating systems and environments. IT admins will have access to a comprehensive management console with RBAC to control system functions.

#### Security

*What is required for the user to log in? How can you secure the connection or the data exchange between the client and the server? What should happen to the account if there is a “brute force” hacking attempt? What happens if the user forgets their password?*

* To ensure secure user login, the DriverPass system should implement strong password requirements, hashing, and login attempt limits. Data exchange security should be protected using HTTPS, secure cookies, and a Content Security Policy. In case of brute-force attacks the system should implement login attempt limits, account lockouts, IP address monitoring, and user notifications. For password resets, the system should provide a request mechanism, generate temporary reset tokens, enforce strong password requirements, and maintain a password reset history.

### Functional Requirements

*Using the information from the scenario, think about the different functions the system needs to provide. Each of your bullets should start with “The system shall . . .” For example, one functional requirement might be, “The system shall validate user credentials when logging in.”*

* The system shall allow the user to reset passwords if needed.
* The system shall be secure and protect student data from unauthorized access.
* The system shall allow users to create and manage their accounts.
* The system shall allow administrators to manage user accounts, including creating, editing, and deleting users.
* The system shall provide users with access to a variety of online practice exams.
* The system shall allow users to book on-the-road training sessions with instructors.
* The system shall generate reports for instructors and administrators.
* The system shall be easy to use for students, instructors, and administrators.
* The system shall be scalable to accommodate a growing student population.

### User Interface

*What are the needs of the interface? Who are the different users for this interface? What will each user need to be able to do through the interface? How will the user interact with the interface (mobile, browser, etc.)?*

* *Needs:*
* Easy navigation and clear presentation for all user groups
* Functionality tailored to specific user roles (students, instructors, administrators)
* Accessible through various devices (web, mobile)
* *Functionalities:*
* Students: Browse practice exams, track progress, schedule training
* Instructors: Manage student information, provide feedback, generate reports
* Administrators: Manage users, monitor system usage, generate reports
* *Interaction:*
* Web-based interface with potential mobile apps for students.
* Secure access with role-based permissions to ensure authorized access to sensitive data.

### Assumptions

*What things were not specifically addressed in your design above? What assumptions are you making in your design about the users or the technology they have?*

* The design of the DriverPass system assumes that users have internet access, web-enabled devices, basic computer literacy, and email access. It also assumes that the system will be hosted on a reliable cloud platform, accessible through various browsers and operating systems, compatible with modern web technologies, secure, and scalable to handle a high volume of users.

### Limitations

*Any system you build will naturally have limitations. What limitations do you see in your system design? What limitations do you have as far as resources, time, budget, or technology?*

* The DriverPass system may face limitations due to internet connectivity, technology dependence, user behavior, resource constraints, time constraints, budget constraints, and technological advancements. While the system will provide a valuable tool for driving education, it is important to acknowledge these limitations and consider ongoing efforts to address them. Designing, developing, and testing a robust and scalable system takes time. Time constraints could lead to trade-offs between feature completeness, testing thoroughness, and timely deployment. Developing and maintaining a cloud-based system involves ongoing costs for hosting, infrastructure, and security. Limited budgets could restrict the system's scalability, performance, and security measures. The development and maintenance of a comprehensive driving education platform requires significant resources, including skilled developers, designers, and system administrators. Limited resources could constrain the system's scope, features, and ongoing support capabilities.

### Gantt Chart

*Please include a screenshot of the GANTT chart that you created with Lucidchart. Be sure to check that it meets the plan described by the characters in the interview.*

A calendar with multiple colors

Description automatically generated with medium confidence